

## ABSTRACT

A polycyclic fused ring type  $\pi$ -conjugated organic material (VIIa, VIIb, VIIc, VIId) is obtained in the following manner. That is, as shown in Scheme 1 below, a starting material (I) is dimetalated with an organometallic base. The starting material (I) thus dimetalated is trapped with an organosilicon reagent (i: (1)  $n$ -BuLi or  $t$ -BuLi; (2)  $\text{HMe}_2\text{SiCl}$ ). As a result, an intermediate is obtained. Thereafter, the intermediate is allowed to react with a metal reductant. This causes an intramolecular reductive cyclization reaction to proceed. As a result, a dianion intermediate is produced. The dianion intermediate is trapped with an electrophile (ii: (1) LiNaph, THF, rt, 5 min; (2) electrophile or  $\text{NH}_4\text{Cl}$ ). In this way, the polycyclic fused ring type  $\pi$ -conjugated organic material is obtained. The polycyclic fused ring type  $\pi$ -conjugated organic material, an intermediate therefor, a method for producing the polycyclic fused ring type  $\pi$ -conjugated organic material, and a method for producing the intermediate make it possible to provide a polycyclic fused ring type  $\pi$ -conjugated organic material having excellent light-emitting and charge-transporting properties.